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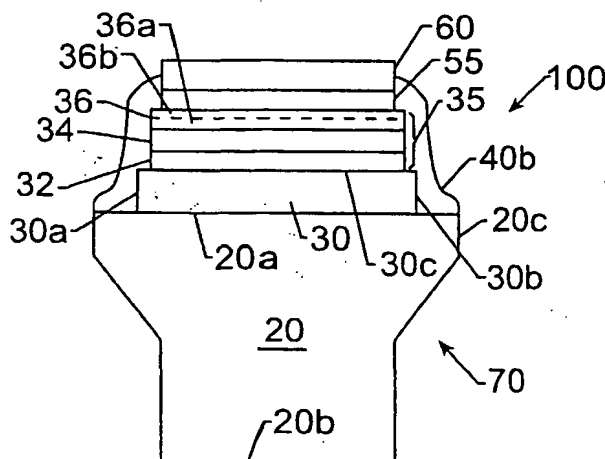
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(54) Title: **LIGHT EMITTING DIODES INCLUDING MODIFICATIONS FOR SUBMOUNT BONDING AND MANUFACTURING METHODS THEREFOR**



(57) Abstract: Light emitting diodes include a substrate, an epitaxial region on the substrate that includes therein a diode region and a multilayer conductive stack on the epitaxial region opposite the substrate. A passivation layer extends at least partially on the multilayer conductive stack opposite the epitaxial region, to define a bonding region on the multilayer conductive stack opposite the epitaxial region. The passivation layer also extends across the multilayer conductive stack, across the epitaxial region and onto the substrate. The multilayer conductive stack can include an ohmic layer on the epitaxial region opposite the substrate, a reflector layer on the ohmic layer opposite the epitaxial region and a tin barrier layer on the reflector layer opposite the ohmic layer. An adhesion layer also may be provided on the tin barrier layer opposite the reflector layer. A bonding layer also may be provided on the adhesion layer opposite the tin barrier layer. A submount and a bond between the bonding layer and the submount also may be provided.

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 11, 30 September 1999 (1999-09-30) -& JP 11 150302 A (NICHIA CHEM IND), 2 June 1999 (1999-06-02); Y paragraphs '0010!-'0013!, '0019!, '0020!	1-35, 57-69, 72-78
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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